



# NATIONAL PARK SERVICE ENVIROFACTS

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## HAZARDOUS WASTE CHARACTERIZATION

### DEFINITIONS

**Solid Waste:** Solid, liquid, or contained gaseous material that is discarded by being disposed of, burned or incinerated, or recycled.

**Hazardous Waste:** Solid waste that has hazardous waste characteristics or is a listed hazardous waste, and is not otherwise excluded from regulation.

### APPLICABLE STANDARDS

**Federal:** Resource Conservation and Recovery Act (RCRA) regulations 40 CFR 261 and 262.11.

**State:** Most states have adopted RCRA waste characterization regulations similar to the Federal rules. However, characterization of non-hazardous solid waste varies from state-to-state. Some states define certain additional waste as special wastes.

### CHARACTERIZATION PROCESS

RCRA solid waste is defined in detail in 40 CFR 261.2. Certain recycled and reused materials are exempt from regulation as solid waste. The RCRA regulations at 40 CFR 262.11 require all parks that generate solid waste to determine whether or not the waste is a hazardous waste (HW). Figure 2 - Definition of a Hazardous Waste (40 CFR 260 Appendix 1) is a convenient flow chart of the procedure. The methodology is outlined as follows:

1. Determine if the waste is excluded from hazardous waste regulation by reviewing 40 CFR 261.4.
2. Determine if the waste is a "listed" hazardous waste by reviewing the lists found in 40 CFR 261, Subpart D. Listed hazardous wastes include the following:
  - Wastes from non-specific sources (F-coded HW).
  - Wastes from specific sources (K-coded HW).
  - Discarded commercial chemical products, off-specification materials, container residues, or spill residues (U- and P-coded HW).

- Mixtures of solid waste and listed hazardous waste are classified as listed HW, regardless of the relative quantities.

3. Determine if the waste is a "characteristic" hazardous waste by reviewing 40 CFR 261, Subpart C. Hazardous waste characteristics and codes include:

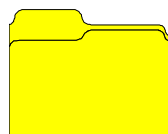
- Ignitability - flashpoint < 140 ° F (D001).
- Corrosivity - pH < 2 or > 12 (D002).
- Reactivity - unstable under normal conditions (D003).
- Toxicity Characteristic (TC) - leaches toxic chemicals in excess of regulatory levels (D004 through D043). This is evaluated by performing the toxicity Characteristic Leaching Procedure (TCLP) test.

Determination of whether a waste is hazardous by characteristics can be made by:

- Testing the waste in accordance with the methods outlined in Subpart C, or
- Applying knowledge of the waste characteristics (e.g., material safety data sheet [MSDS] information for the products that generated the waste).

### RECORDKEEPING

All waste characterization documentation, such as laboratory tests and waste analyses, must be kept on file at the park for a minimum of three years (40 CFR 262.40). It is recommended that, for potential liability issues related to RCRA compliance and off-site disposal, that these records be maintained indefinitely.



### UNKNOWN WASTES

A commonly encountered problem is the characterization of "unknown" waste materials. The first step in characterizing is to determine, if possible, the activity that generated the waste. In addition, any information on the characteristics of the raw materials used in the activity should be gathered. If these steps do not result in a clear characterization of the waste, then laboratory analysis of the material should be performed. A sampling and analysis protocol must be

developed, based upon what is known about the material. The cost of this task can be minimized by performing less expensive screening tests prior to conducting more comprehensive and costly analyses. Waste disposal companies with experience in characterization can often assist in this process. However, whenever a waste disposal firm is used, it should be remembered that the generator always has the ultimate responsibility for proper characterization.

### TYPICAL SOLID WASTE CHARACTERIZATION

The following list includes examples of typical characterizations of materials that are defined as solid waste:

- Used oil - If managed under federal or most state used oil management rules it is not a hazardous waste, unless it is mixed with certain types of listed hazardous waste or meets the definition of a characteristic HW [40 CFR 261.6(a)(4)].
- Batteries - Generally non-hazardous waste if managed through a recycling program.
- Solvent - Waste solvent is typically a HW for ignitability (D001) and/or is listed based upon its composition (F001 through F005).
- Solvent-based paint - Similar to solvent dependent upon the chemical composition.
- Lead paint - Dry, lead-based paint chips can be high in total lead content. A TCLP analysis should be performed to evaluate TC potential.
- Antifreeze - Typically managed as a non-hazardous waste; often managed with a park's waste oil stream.
- Asbestos - Typically managed as a special waste. Other rules outlining special handling requirements apply.
- Tires - A non-hazardous waste; however, in most states banned from land disposal and must be recycled.
- Fuel - Waste fuel is typically a hazardous waste due to ignitability.

### ENVIROFACTS X-REFERENCES

- Hazardous Waste Generator Status Determination and Requirements
- Waste Management Envirofacts

## HAZARDOUS WASTE CHARACTERIZATION CHECKLIST

Checklist Item	Notes
1. Confirm that evaluations have been made to determine if wastes generated at the park are RCRA solid waste as defined by 40 CFR 262.2. (Note: Certain recycled or reused materials are exempt from RCRA regulation.)	
2. If a waste has been defined as RCRA solid waste, verify that evaluations have been made to determine whether the waste is exempt from RCRA hazardous waste regulation by 40 CFR 262.4.	
3. If a waste is not exempted, ensure that a determination has been made as to whether the waste is a listed hazardous waste under 40 CFR 261, Subpart D. Listed wastes can be from specific or non-specific sources. Mixtures of solid and hazardous waste are classified as hazardous waste.	
4. If a waste is not a listed hazardous waste, confirm that a determination has been made as to whether the waste is a characteristically hazardous waste under 40 CFR 262, Subpart C. This is done by knowledge of the process and material characteristics or by performing specific tests as outlined in the regulations.	
5. Ensure that waste characterization documents are compiled and maintained in facility hazardous waste management files.	